

I claim:

1. An air boost device comprising:

a compressor housing having an air inlet and an air outlet; and

a compressor wheel mounted for rotation within said compressor housing, wherein said compressor wheel is a titanium centrifugal compressor wheel including:

a hub defining an axis of rotation, and

a plurality of backswept aerodynamic blades carried on the surface of said hub and defining air passages between adjacent blades,

wherein each of said air passages is definable by from one to three solid die inserts which can be inserted between and pulled from between said blades without deformation of said dies or blades.

2. An air boost device as in claim 1, wherein said compressor wheel is a centrifugal compressor wheel adapted for drawing air in axially, accelerating said air centrifugally, and discharging air radially.

3. An air boost device as in claim 1, wherein said compressor housing includes a volute-shaped chamber adapted for receiving air discharged from said compressor wheel.

4. An air boost device as in claim 1, wherein the number of die inserts necessary to define the air passage between said blades is three.

5. An air boost device as in claim 1, wherein the number of die inserts necessary to define the air passage between said blades is two.

6. An air boost device as in claim 1, wherein the number of die inserts necessary to define the air passage between said blades is one.

7. An air boost device as in claim 1, wherein said compressor wheel is comprised of a titanium alloy.

8. An air boost device as in claim 1, wherein said compressor wheel aerodynamic blades comprise alternating full blades (4) and splitter blades (5).

9. An air boost device as in claim 1, wherein said compressor wheel is comprised of a titanium alloy comprising titanium, aluminum and vanadium.

10. A turbocharger comprising:

- a turbine housing including an exhaust gas inlet and an exhaust gas outlet;

- a turbine wheel rotationally mounted within said turbine housing;

- a compressor housing including an air inlet and an air outlet; and

- a titanium centrifugal compressor wheel rotationally driven by said turbine wheel, wherein said titanium centrifugal compressor wheel comprises:

- a hub defining an axis of rotation, and

- a plurality of backswept aerodynamic blades carried on the surface of said hub and defining air passages between adjacent blades,

- wherein each of said air passages is definable by from one to three solid die inserts which can be inserted between and pulled from between said blades without deformation of said dies or blades.

11. A turbocharger as in claim 10, wherein said compressor wheel is a centrifugal compressor wheel adapted for drawing air in axially, accelerating said air centrifugally, and discharging air radially.

12. A turbocharger as in claim 10, wherein said compressor housing includes a volute-shaped chamber adapted for receiving air discharged from said compressor wheel.

13. A turbocharger as in claim 10, wherein the number of die inserts necessary to define the air passage between said blades is three.

14. A turbocharger as in claim 10, wherein the number of die inserts necessary to define the air passage between said blades is two.

15. A turbocharger as in claim 10, wherein the number of die inserts necessary to define the air passage between said blades is one.

16. A turbocharger as in claim 10, wherein said compressor wheel is comprised of a titanium alloy.

17. A turbocharger as in claim 10, wherein said compressor wheel aerodynamic blades comprise alternating full blades (4) and splitter blades (5).

18. A turbocharger as in claim 10, wherein said compressor wheel is comprised of a titanium alloy comprising titanium, aluminum and vanadium.

19. A method as in claim 18, wherein said titanium alloy comprises 85-95% titanium, 2-8% aluminum, and 2-6% vanadium.

20. A method as in claim 18, wherein said titanium alloy comprises approximately 90% titanium, 6% aluminum, and 4% vanadium.